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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LE, HUYEN D

ART UNIT PAPER NUMBER

2615

DATE MAILED: 06/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/539,177

Applicant(s)

RASMUSSEN, KARSTEN BO

Examiner

HUYEN D. LE

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/16/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to because of the following: FIR or IIR should be changed to --Finite Impulse Response (FIR) or Infinite Impulse Response (IIR)--. Appropriate correction is required.

Specification

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Ribic (U.S. patent 7,020,290).

Regarding claims 1-4, Ribic teaches a microphone system for providing a directional response by generating a fixed forward pointing directivity pattern and a fixed backward directivity pattern (figure 5). Cezanne further teaches the forward and backward directivity pattern signals that are mixed at a ratio as claimed (figure 5, it is inherent that there is a ratio between the front signals and the rear signals at the output of the discrimination unit 4c (FF) and the with the discrimination unit 4d (RR)), and the fixed directivity patterns that are set for optimized directivity when the microphone system is located at an object (col. 6, lines 20-42).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cezanne et al. (U.S. patent 5,473,701).

Regarding claims 1-3 and 5, Cezanne et al. teaches a method and apparatus a microphone system for providing a directional response by generating a fixed forward pointing directivity pattern and a fixed backward directivity pattern (figure 2). Cezanne further teaches the forward and backward directivity pattern signals that are mixed at a ratio as claimed (50, 55 and see col. 10, lines 42-47), and the fixed directivity patterns that are set for optimized directivity when the

microphone system is located at an object (col. 1, lines 56-60, col. 2, lines 2-8 and col. 3, lines 66-67 through col. 3, lines 1-4).

Cezanne does not specifically teach the microphone system that is used in a hearing aid. However, Cezanne does not restrict to any type of audio communication devices (col. 1, lines 10-11).

Therefore, it would have been obvious to one skilled in the art to provide the microphone system of Cezanne in any communication devices such as a hearing aid for greater application.

Regarding claim 4, Cezanne teaches the optimal forward and backward pointing directivity patterns that are generated in a number of frequency bands (col. 10, lines 30-33).

Regarding claim 6, Cezanne teaches two omni-directional microphones (10, 12) as claimed (figure 3).

Regarding claim 7, Cezanne teaches two omni-directional microphones and the analog to digital conversion as claimed (figure 3). Cezanne does not specifically teach Infinite Impulse Response (IIR) or Finite Impulse Response (FIR) filters.

However, Cezanne does teach the digital signals for a plurality of frequency bands (figure 3 and see the abstract), and providing the filters for the plurality of frequency bands in a microphone system is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide any type of filters for the Cezanne microphone system such as FIR or IIR filters for providing more accurate and improved frequency characteristics in the digital signals.

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Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hou (US 2002/0034310) teaches adaptive microphone matching in multi-microphone directional system.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (571) 272-7502. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SINH TRAN can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HL
June 17, 2006



HUYEN LE
PRIMARY EXAMINER